

Elecon Measurements

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PG/MPU/V3/0316



PROGRAMMING GUIDE

MPU 5110

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1. FEATURES

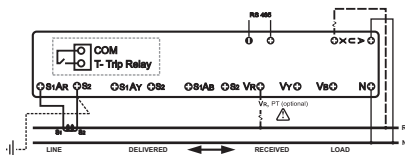
- Universal Auxiliary (80 - 300 VAC/DC) supply.
- True RMS measurement.
- Active energy, positive energy accumulation.
- 'OLD' register to store the previously cleared energy value.
- User configurable (Editable) password.
- Simultaneous sampling of Volts & Amps.
- Universal Voltage Input (50 - 550 VAC) and Current Secondary (0.05A to 6A).

2. UNIQUE FEATURES

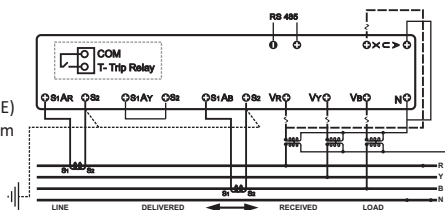
- 1 row 6 digit displays for readability.
- Small to medium sized single phase and 3phase AC Induction & Synchronous Motors
- Communicates for Electrical Parameters Using RS 485
- Over/Under voltage, Frequency & Current protection.
- Neutral current protection.
- Fault Analysis Monitoring.
- Monitors status of Electrical Parameters when NO fault.
- Checks Alarm Occurrence for Early action.
- Instantaneous/Delay Tripping delay programmable up to 600 Seconds.
- Parameters (VLL, VLn, A, F, W, UA, Wh, PF, Load hour) along with respective R, Y and B Phases.

3. WIRING DIAGRAM - MPU 5110

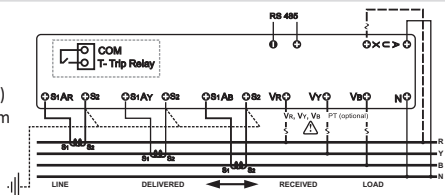
Single phase connection





Delta connection (2E)
3Phase 3 wire system



Star connection (3E)
3Phase 4wire system









5. KEY FUNCTIONS

Key	In SET (Programming) mode	In RUN (Measurement) mode
Right/UP Reset 	To select the value and accept the value (it act as a Right key in programming mode)	To scroll pages to look at different parameters. (It act as a RESET Key in Relay trip Condition mode)
DOWN 	To edit the value/system type downward in edit mode and scroll through the parameters.	To scroll pages to look at different parameters



6. ENTERING CONFIGURATION (SETUP) MODE

To configure the setup parameters in MPU meter through front panel, the following steps can be followed.







Step	Actions	Display Reads	Range/Options/Comments
1	Press RIGHT & DOWN keys together to enter SETUP  	0000 first digit "0" is blinking	
2	Press DOWN key to decrement the first digit to "9" sequentially come to digit "1" 	1000 first digit "1" blinking.	If any other password is already set press RIGHT and DOWN keys to reach the right password  
3	Press RIGHT key four times to accept the password. 	CLEAR	Defines the clearing option for the meter.

Press DOWN key for SETUP Mode
Press RIGHT key for CLEAR Mode

CLEAR MODE

4	Press RIGHT key 	CLEARn Display Clr "n" Options can be changed by pressing DOWN key. Display will prompt to 'y' or 'n' while pressing DOWN key.	Option : Y = YES (for clearing the energy) N = NO (for not clearing the energy)
5	Press RIGHT key  To accept the edited option.	0000LL Displays Home page (Clear Mode ends here)	

SETUP MODE

6	Press DOWN key to navigate to next parameter. 	SEArEL	Defines the power system configuration. Options: STAR/DELTA/1. Phase
7	Press RIGHT key to select STAR/DELTA/1. PHASE 	SEArEL StAr/dELT/ 1.Phase, selected mode blinks. Options can be changed by pressing DOWN key.	Press RIGHT key to accept the mode. 
8	Press DOWN Key 	415.0PP (PT Primary) (415.0 -default/factory set)	Range:100V to 999kV
9	Press RIGHT key to set the value 	415.0PP First digit blinking can be edited using DOWN key.	

10	Press RIGHT key to accept the edited value for first digit.		Second digit blinking, can be edited using DOWN key. Press RIGHT key to accept the edited value. Continue the same method till fourth digit.
11	Press RIGHT key to accept the value.		Eg: To set 11.00kV Set first four digits (1100) as explained above. Keep pressing DOWN key to place decimal point at appropriate location.
12	Press DOWN key		Range:50V to 550V Follow steps- 9 to 11 to set the value
13	Press DOWN key		Range:0.5A to 99kA Follow steps- 9 to 11 to set the value
14	Press DOWN key		Range:0.5A to 6A Follow steps- 9 to 11 to set the value

28	Press DOWN key		Energy value format i.e., the energy accumulated in the meter to be displayed in resolution (default) or counter format. Comment: Can change the option using UP & DOWN keys CAUTION: In counter mode energy accumulation is visible depending on load.
29	Press DOWN key		Current Delay time. Range: 1.000 to 180.0
30	Press DOWN key		Energy Selection. Wh / VAH.
31	Press DOWN key		If "n"(no) is selected then Meter enters into RUN mode without affecting any edited Values in the setup
32	Press RIGHT key to store the changes done		Display returns to Run mode.

Once the required parameter is programmed press the DOWN key continuously till it reaches SAVE page directly.

6 The List of parameters that can be configured and the range is given below

Sl.No.	Parameter	Default setup	Range / Options
1	Element configuration(ELEMNT)	STAR	STAR/ DELTA/1.Ph.
2	PT Primary (P.P)	415.0	100V- 999kV
3	PT Secondary (P.S)	415.0	50V - 550V

15	Press DOWN key		Reverse lock (blocks energy accumulation in case the CT polarity is reverse). Option : NO/YES
16	Press DOWN key		Arithmetic (Arth), Vector harmonics (UEC.H). Vector (UEct) can be selected using DOWN key.
17	Press DOWN key		It is the Starting Delay time for relay tripping. Range :1.000 to 180.0 Sec
18	Press DOWN key		Over Voltage Line to Line. Range:0 to 999 KV
19	Press DOWN key		Under Voltage Line to Line. Range:0 to 999 KV
20	Press DOWN key		Over current. Range: 0 to 99 kA
21	Press DOWN key		Under Current. Range:0.050 to 99 KA
22	Press DOWN key		Digital delay for relay tripping. Range: 1.000 to 180 .0 sec

4	CT Primary (C.P)	5.000	0.5A - 99kA
5	CT Secondary (C.S)	5.000	0.5A - 6A
6	VA selection (UA.SEL)	Arith (Arithmetic)	Arith (Arithmetic) / Vector/ vec.H (vector harmonics)
7	Start Delay (S.d)	5.000	1.000 - 180.0 Sec
8	Over Voltage Line to Line (o.U)	550.0	0 -999 KV
9	Under Voltage Line to Line (u.U)	10.00	0 -999 KV
10	Over Current (o.A)	6.000	0-99 KA
11	Under Current (u.A)	0.200	0.050-99 KA
12	Stop Delay (d.d)	5.000	1.000-180.0 Sec
13	Baud Rate	9600	2400/4800/9600/19.20K
14	Parity	Even	Even/Odd/No
15	Device Id (dEV.Id)	1.000	1.000 to 247.0
16	Password (PW)	1000	1000 to 9999
17	Energy (En)	RESOLU	RESOLU /COUNTR
18	Current Delay (A.d)	5.000	1.000-180.0 Sec
19	Energy Selection (E.S)	Wh	Wh/VAH

7. Enabling and disabling of Auto scrolling

Enabling auto scrolling: Press UP key continuously for 5 seconds or until display shows EnL.Au. For upward scrolling. Press Down key continuously for 5 seconds or until display shows EnL.Au. For downward scrolling.
Disabling auto scrolling: Press any key (UP/DOWN), display show dSbL. Au. And returns to normal mode.

23	Press DOWN key		Defines the communication speed. (baud rate) (9600 - default/factory set) Option :2400,4800,9600, 19.20k Options can be changed by using RIGHT & DOWN keys.
24	Press DOWN key		Internal communication error check EUE n(ven)/odd(odd)/no(no parity) Options can be changed by using RIGHT & DOWN keys.
25	Press DOWN key		Defines the (ID) communications identification number. Options- 1 to 247
26	Press DOWN key		Range: 1000-9999. (Password user definable). CAUTION: memorize the Password. Use the same Password for next time. Instruments will reject other Passwords.
27	Press RIGHT key to view the password		CAUTION: Password can be reset only at the factory.

8. LED INDICATION

Rev - ON	Reverse
Old - ON	Cleared Values
	Communication ON
Trip - On	Trip relay off
K - ON	Kilo
T1	Pulse / Reserved
M - ON	Mega
- - ON	Minus/Reverse

9. Mechanical Specification:

Dimension Bezel:
96 x 96 mm (Depth 50mm behind Bezel)

Panel Cutout:
92⁺⁰₋₂ x 92⁺⁰₋₂ mm

